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1980 Survey of the Electronic Funds Transfer Transaction System

by

James W. Trotter
Director, Operations & Technology

and

Constance A. Blecha
Research Assistant

Bank Administration Institute
Park Ridge, Illinois

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1980 Survey of the Electronic Funds Transfer Transaction System

Electronic Funds Transfer Transactions

The checkless society, heralded in the 1950s as a payments system revolution, is taking shape in the 1980s along evolutionary lines. Early forecasters were convinced that the ever-increasing burden of paper transactions would rapidly outpace the banking industry's ability to provide orderly processing. This glum prediction has proven less than accurate. The industry has been able to keep pace with increasing volumes of paper transactions through improved technologies and increased levels of management sophistication.

Although consumers have been reluctant to embrace all EFT systems without reservations, particular services — which consumers perceive as offering direct benefits — are gaining widespread acceptance. For instance, point-of-sale (POS) systems have generally operated as an authorization vehicle for checks and credit cards, rather than as a mechanism for the actual transfer of funds among consumer and merchant accounts. Even at the current level of service, POS systems have attained somewhat mixed results.

Currently, the "rising stars" in retail EFT are home banking services, including telephone bill payment (TBP), interactive television, and home terminals for banking transactions. Interest in home banking is international in scope. Equador is the first country to offer TBP nationwide. Impressive experiments are under way in France and Great Britain in the use of interactive video techniques. In the United States, approximately 400 financial institutions currently offer TBP services. Several home banking experiments using television or home terminals have been announced in Ohio, New York, Florida, and California. These developments have been largely experimental in nature, and it is far too early to determine accurately the outcome of these trials.

Two services have established a primary position in EFT. The Automated Clearing House (ACH) moves debit and credit transactions among financial institutions. The Automated Teller Machine (ATM) provides an alternative to manual posting of routine financial transactions. Both services have been well supported by banks and well received by consumers.

This report, the third in a series of annual examinations of EFT transactions, analyzes the growth and usage patterns of two EFT services: ACHs and ATMs. This analysis also provides insight into transaction mix and observable trends, enabling financial institutions to measure and track their own experience and to compare themselves with other representative institutions.

Background

Bank Administration Institute has been involved in payments systems research for several years by conducting studies of both the check collection system and the emerging technology for the electronic transfer of funds. To consolidate research in the payments system, the BAI Check Collection Performance Measurement Survey was expanded in 1978 to begin tracking electronic and paper transactions simultaneously. This is the third year these data have been accumulated. The 1978 data were published in the form of a research survey. The 1979 data were published separately from the Check Collection Survey, in a format that subsequent reports will closely follow.

The Check Collection Survey, which has been conducted by BAI since 1971, is a one-week survey of the check processing activity of major banks. The survey is mailed each year to 225 banks with assets over $250 million. It is designed to provide a means of tracking the performance of the check collection system, especially exception items and productivity, in order to provide an early warning system for emerging problems throughout the banking industry.

Survey Respondents

In 1980, a total of 170 banks participated in the BAI Check Collection Survey by collecting data on both paper and electronic funds transfer transactions during the week of November 17–21. These data provide a one-week "snapshot" that allows performance comparisons with surveys conducted during similar periods in 1978 and 1979.

The results were obtained by analyzing the data supplied by the 168 banks that answered the questions on ACH transactions and by the 126 banks that answered the questions on ATM transactions. All the participating banks had assets of more than $250 million.

Several respondents could not answer every survey question because of the internal systems in their banks. Consequently, only those banks that furnished valid answers to all questions pertaining to a given formula were included in the tabulations, which accounts for the varying number of respondents shown in the different tables. All formulas used for tabulating the results are provided to assist bankers in replicating the survey within their own banks for purposes of comparison.

Although the identities of reporting banks remain confidential, banks can utilize the data to compare their performance within a given market. Appendix B offers a map that defines the boundaries of the 16 geographic areas used in the development of this report. An accompanying table provides the number of survey respondents from each area.

1980 Survey Highlights

Over the past two survey periods, ACH credit activity exceeded debit transactions. However, 1980 survey respondents reported a significant percentage increase in debit transactions. On the average, debits sent represented 66.1% of ACH transactions; debits received represented 58.5% of such transactions. Interestingly, only two areas (Houston and Denver) reported sending more debits than credits. All other areas reported receiving more debits than credits.

The average percentage of ACH items returned remains low. However, the overall percentage of return items sent increased from 0.3% to 0.6%. Although there was a percentage improvement in debit return items — from 0.8% to 0.5% — credit returns increased from 0.1% to 0.2%. A similar pattern has emerged for return items received.

Insurance premium debits continue to constitute the major portion of ACH debit transactions sent (77.8%). Although banks that receive ACH debits are very often unable to classify the type of debit — 54.6% of ACH debits received were listed in the "other payments" category or were otherwise unidentifiable — insurance premiums clearly appear to be the dominant type (31.7%) of debit received by banks.

For ATM transactions, the 1980 survey respondents indicated little change in transaction mix. Withdrawals from checking continue to lead the way, representing 52.2% of ATM transactions. Balance inquiry continues to be a popular option, accounting for 19.1% of ATM transactions. This percentage represents continued minor slippage over prior years and may be a result of consumer experience and an increasing number of banks that print balance information on the ATM receipt.

Dollar amounts for each type of ATM transaction increased slightly in all categories except checking account deposits. The number and types of ATM transactions continue to increase overall. In the 1979 report, average ATM deposits exceeded withdrawals by $18,295. For 1980, average ATM deposits exceeded withdrawals by $22,861. Interestingly, the ratio of dollars deposited to dollars withdrawn declined slightly from 1.8:1 to 1.7:1. Note that the net increase in dollar amounts is due to increased overall ATM transaction volume and to generally higher amounts per transaction.

Although ATMs are located mainly in the bank main office or branch locations, planned installations show a definite shift toward an off-premise location. Almost 25% of new installations planned are destined for off-premise locations. Installation plans show continued high growth for ATMs.

On-line ATM operation continues to be preferred to off-line operation. In 1979, 68.4% of ATMs were reported to be operating in an on-line mode. The 1980 data show that on-line ATM operation has increased to 87.3% of the reported sample.

In reviewing this report, it is important to keep in mind that the results are based on a one-week "snapshot" of the payments system, using data gathered from a limited number of large banks. These limitations necessarily preclude strict interpretations of the data. As with previous surveys' results, care should be taken in extrapolating observable trends. In order to assist bankers with subsequent data analysis, both the averages and the medians are provided.

Findings: ACH

Thirty-two ACHs were operating throughout the United States during this survey period. Total monthly volume by November, 1980, surpassed 18,500,000 transactions. Of this total, credits initiated by the government accounted for more than 12,000 transactions, or slightly more than 65% of total ACH transactions.

The National Automated Clearing House Association (NACHA) has paid increased attention to building private sector volume, with successful results. Private sector volume during the 1980 survey period was slightly under 6,500,000 transactions, an 88% increase over the approximately 3,500,000 transactions for the same period in 1979. Because most government credits are initiated within the first few days of each month (predominantly Social Security payments), the measurements taken by the mid-November survey predominantly reflect private sector debits and credits.

Because this survey is limited to a sampling of banks, the number of ACH transactions that survey participants sent, received, or returned are statistically insignificant. However, transaction mix data, expressed as percentages, do provide insight for tracking observable trends relating to transaction types, destination, and origin.

ACH Transactions: Sent

The percent of ACH debits and credits sent by the survey participants in the 16 geographic areas is shown in Table 1. On the average, banks sent more debits (66.1%) than credits (33.9%) during the survey week — a reversal of the 1979 findings. Houston and Denver reported sending more debits than credits, Houston for the second year in a row. Although the arithmetic average may be somewhat skewed due to the high volumes of debits sent by particular areas, all areas except Atlanta reported a percentage increase in debits versus credits sent. The median rates were 13.7% for debits sent and 86.3% for credits.

ACH Transactions: Received

Table 2 shows the percent of ACH debit and credit items received by area. For all areas, the percentages of ACH debits received were higher than credits received. For the first time since this survey began, average debits received (58.5%) exceeded average credits received (41.5%). Median debits (72.9%) were also higher than median credits received (27.1%). These findings are consistent with the comparable statistics compiled by NACHA for private sector debit and credit activity. NACHA reported that private sector debits constituted 61% of all ACH transactions for the month of November, 1980.

Table 1

Percent of ACH Debits and Credits Sent by Area

Area	Percent Debits†			Percent Credits‡		
	1978	1979	1980	1978	1979	1980
Boston	0.2%	2.1%	10.9%	99.8%	97.9%	89.1%
New York	92.5	12.3	29.2	7.5	87.7	70.8
Philadelphia	13.6	5.2	9.7	86.4	94.8	90.3
Pittsburgh	7.8	25.8	31.7	92.2	74.2	68.3
Washington, D.C.	21.0	15.2	20.3	79.0	84.8	79.7
Atlanta	74.0	43.0	37.0	26.0	57.0	63.0
Chicago	33.5	7.6	19.7	66.5	92.4	80.3
Cleveland	18.5	10.5	33.4	81.5	89.5	66.6
Detroit	4.6	10.0	32.7	95.4	90.0	67.3
Minneapolis/St. Paul	*	*	*	*	*	*
St. Louis	61.0	17.9	43.3	39.0	82.1	56.7
Dallas	15.1	0.0	46.6	84.9	100.0	53.4
Houston	32.9	52.3	58.1	67.1	47.7	41.9
Los Angeles	25.2	10.4	47.2	74.8	89.6	52.8
San Francisco	12.7	40.9	49.4	87.3	59.1	50.6
Denver	1.7	14.7	57.5	98.3	85.3	42.5
Total banks	130	104	133	130	104	133
Average	44.0%	29.5%	66.1%	56.0%	70.5%	33.9%
Median	17.7%	0.7%	13.7%	100.0%	99.3%	86.3%

*No respondents: † $\frac{Q1}{Q5} \times 100$; ‡ $\frac{Q3}{Q5} \times 100$.

Table 2

Percent of ACH Debits and Credits Received by Area

Area	Percent Debits†			Percent Credits‡		
	1978	1979	1980	1978	1979	1980
Boston	15.3%	8.7%	57.7%	84.7%	91.3%	42.3%
New York	53.8	25.3	76.2	46.2	74.7	23.8
Philadelphia	65.3	4.5	75.9	34.7	95.5	24.1
Pittsburgh	8.6	2.9	80.3	91.4	97.1	19.7
Washington, D.C.	41.4	11.1	53.4	58.6	88.9	46.6
Atlanta	45.4	24.7	68.0	54.6	75.3	32.0
Chicago	18.7	3.7	59.7	81.3	96.3	40.3
Cleveland	54.4	5.7	57.5	45.6	94.3	42.5
Detroit	16.3	36.4	72.6	83.7	63.6	27.4
Minneapolis/St. Paul	*	*	*	*	*	*
St. Louis	38.5	21.5	63.3	61.5	78.5	36.7
Dallas	11.9	2.1	68.5	88.1	97.9	31.5
Houston	14.9	15.8	79.0	85.1	84.2	21.0
Los Angeles	66.2	15.1	54.1	33.8	84.9	45.9
San Francisco	35.7	17.6	70.4	64.3	82.4	29.6
Denver	6.7	2.1	57.5	93.3	97.9	42.5
Total banks	130	146	168	130	146	168
Average	26.7%	11.1%	58.5%	63.3%	88.9%	41.5%
Median	25.8%	4.3%	72.9%	69.9%	95.7%	27.1%

*No respondents: † $\frac{Q2}{Q6} \times 100$; ‡ $\frac{Q4}{Q6} \times 100$.

Sent Versus Received

Table 3 shows the relationship of items sent versus items received by type of ACH transaction and for total transactions. One area, Cleveland, sent more ACH items of both types (57%) than were received. Two areas, Boston and Cleveland, reported sending more credits than were received. No area reported sending more debits than were received.

ACH Transactions: Returned

Return items for ACH transactions were measured in two ways: return items that were sent, and return items that were received. Return items sent refeur to any ACH transaction returned to the originator either which could not be posted to an accou[illegible] or for which no prenotification was on file. Return items received are defined as any ACH transactions received back by the originator, returned by either the ACH or the intended receiver. The survey did not ask respondents to identify any reason for returns.

Table 4 shows the percent of ACH return items sent by area. Although average credit returns increased slightly from 0.1% to 0.2%, median credit returns sent remained at zero. The average percentage of debit items returned declined from 0.8% to 0.5%, even though the median rate of debits returned increased from zero to 1.7%.

Table 5 indicates the percent of return items received back by the originator. Consonant with the findings of return items sent, return items received show a reduction for debits and an increase for credits. Data for return items received, for both debits and credits did not fluctuate as widely as was the experience for return items sent (see Table 4).

ACH Debit Types

The percent of ACH debits sent by the responding banks by type of transaction is shown in Table 6. As expected, insurance premium payments again led all other types of debits as an overall percentage of items sent, accounting for 77.8% of debit volume. Insurance payments were followed in frequency by corporate payments (8.1%), home mortgage payments (1.7%), and telephone bill payments (1.0%). Unclassified "other" payments constituted 11.4% of debits sent.

Table 3

Percent of ACH Items Sent Versus Received by Area

Area	Percent of Debits†						Percent of Credits‡						Total ACH Items§					
	Sent			Received			Sent			Received			Sent			Received		
	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
Boston	0.7%	16.6%	19.4%	99.3%	83.4%	80.6%	42.4%	26.5%	53.9%	57.6%	73.5%	46.1%	38.4%	26.0%	42.8%	61.6%	74.0%	57.2%
New York	81.4	10.8	12.5	18.6	89.2	87.5	29.2	25.7	24.5	70.8	74.3	75.5	71.8	27.5	21.7	28.2	72.5	78.3
Philadelphia	6.0	10.1	4.1	94.0	89.9	95.9	43.3	5.8	24.2	56.7	94.2	75.8	23.4	5.9	14.2	76.6	94.1	85.8
Pittsburgh	43.8	17.5	27.6	56.2	82.5	72.4	46.1	6.6	44.3	53.9	93.4	55.7	45.9	7.8	36.0	54.1	92.2	64.0
Washington, D.C.	15.3	22.2	14.5	84.7	77.8	85.5	32.4	9.2	47.9	67.6	90.8	52.1	26.3	11.1	37.4	73.7	88.9	62.6
Atlanta	46.3	22.6	15.5	53.7	77.4	84.5	20.1	11.1	32.2	79.9	88.9	67.8	34.6	16.3	23.9	65.4	83.7	76.1
Chicago	69.6	17.2	22.2	30.4	82.8	77.8	51.2	15.6	48.6	48.8	84.4	51.4	56.2	16.8	45.5	43.8	83.2	54.5
Cleveland	8.0	22.6	36.0	92.0	77.4	64.0	31.3	17.9	60.8	68.7	82.1	39.2	20.3	18.8	57.0	79.7	81.2	43.0
Detroit	1.6	4.6	19.0	98.4	95.4	81.0	6.3	4.2	43.3	93.7	95.8	56.7	5.6	3.2	28.4	94.4	96.8	71.6
Minneapolis/St. Paul	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
St. Louis	22.3	15.4	27.1	77.7	84.6	72.9	10.3	30.6	49.2	89.7	69.4	50.8	15.4	30.3	46.8	84.6	69.7	53.2
Dallas	36.6	0.0	21.6	63.4	100.0	78.4	30.6	4.3	39.5	69.4	95.7	60.5	31.4	4.2	33.0	68.6	95.8	67.0
Houston	12.6	18.7	31.2	87.4	81.3	68.8	4.9	17.6	30.8	95.1	82.4	69.2	6.1	18.6	32.7	93.9	81.4	67.3
Los Angeles	4.4	11.5	9.8	95.6	88.5	90.2	21.3	12.8	15.5	78.7	87.2	84.5	10.9	12.9	13.1	89.1	87.1	86.9
San Francisco	24.4	30.4	13.1	75.6	69.6	86.9	55.3	15.3	14.7	44.7	84.7	85.3	47.6	16.6	14.8	52.4	83.4	85.2
Denver	7.6	35.2	13.1	92.4	64.8	86.9	25.4	7.4	19.7	74.6	92.6	80.3	24.4	8.1	16.5	75.6	91.9	83.5
Total banks	130	142	168	130	142	168	130	143	168	130	143	168	130	144	168	130	144	168
Average	38.4%	39.6%	52.6%	61.6%	60.4%	47.4%	31.5%	16.2%	44.6%	68.5%	83.8%	55.4%	34.2%	19.6%	49.6%	65.8%	80.4%	50.4%
Median	0.0%	0.0%	0.1%	100.0%	100.0%	99.9%	10.8%	5.0%	30.0%	85.9%	95.0%	70.0%	8.6%	5.1%	20.7%	87.8%	94.9%	79.3%

*No respondents; † $\frac{Q1/Q2}{Q1 + Q2} \times 100$; ‡ $\frac{Q3/Q4}{Q3 + Q4} \times 100$; § $\frac{Q5/Q6}{Q5 + Q6} \times 100$.

Table 4

Percent of ACH Items Returned of Items Sent by Area

Area	Percent Debits†		Percent Credits‡		Percent Total§	
	1979	1980	1979	1980	1979	1980
Boston	28.5%	3.0%	2.4%	0.0%	7.8%	1.7%
New York	0.0	8.9	0.1	0.0	0.3	5.9
Philadelphia	2.0	1.4	0.5	10.0	10.3	24.3
Pittsburgh	1.4	0.8	8.4	1.6	2.6	6.8
Washington, D.C.	20.7	12.3	0.2	0.1	2.8	1.7
Atlanta	1.4	57.8	0.6	0.5	1.0	5.5
Chicago	0.1	1.2	0.7	0.6	1.0	3.0
Cleveland	1.1	68.7	0.1	0.3	0.2	0.9
Detroit	13.6	26.8	0.0	3.6	7.6	9.6
Minneapolis/St. Paul	*	*	*	*	*	*
St. Louis	0.2	37.0	0.2	0.2	0.8	0.8
Dallas	0.0	0.5	0.0	1.3	0.1	1.1
Houston	0.0	0.7	0.1	16.9	0.1	1.1
Los Angeles	0.2	29.9	1.7	1.5	1.3	14.3
San Francisco	0.8	53.2	1.2	13.0	2.9	13.7
Denver	43.3	0.5	0.1	1.4	1.5	0.7
Total banks	51	78	98	118	96	120
Average	0.8%	0.5%	0.1%	0.2%	0.3%	0.6%
Median	0.0%	1.7%	0.0%	0.0%	0.3%	1.5%

*No respondents: † $\frac{Q7}{Q1} \times 100$; ‡ $\frac{Q9}{Q3} \times 100$; § $\frac{Q11}{Q5} \times 100$.

Table 5

Percent of ACH Items Returned of Items Received by Area

Area	Percent Debits†		Percent Credits‡		Percent Total§	
	1979	1980	1979	1980	1979	1980
Boston	2.7%	1.1%	0.0%	1.6%	0.1%	1.1%
New York	1.7	1.1	0.0	2.2	0.7	1.1
Philadelphia	0.9	0.4	0.0	0.6	0.0	0.4
Pittsburgh	0.0	0.3	0.0	0.2	0.0	0.3
Washington, D.C.	3.3	0.4	0.0	0.2	0.2	0.3
Atlanta	6.2	1.1	0.1	0.1	0.3	0.6
Chicago	0.2	1.3	0.0	2.4	0.0	1.3
Cleveland	1.3	0.2	0.0	0.4	0.1	0.3
Detroit	0.8	0.4	0.0	0.4	0.2	0.4
Minneapolis/St. Paul	*	*	*	*	*	*
St. Louis	1.2	2.6	6.3	0.3	2.1	2.3
Dallas	0.0	0.7	0.0	1.6	0.0	0.8
Houston	0.7	0.3	0.5	3.6	0.4	0.6
Los Angeles	0.8	4.3	0.2	0.3	0.2	1.1
San Francisco	1.6	0.8	0.9	0.1	0.7	0.5
Denver	0.0	0.5	0.1	0.1	0.1	0.3
Total banks	134	155	138	155	137	155
Average	0.9%	0.5%	0.0%	0.2%	0.1%	0.4%
Median	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%

*No respondents: † $\frac{Q8}{Q2} \times 100$; ‡ $\frac{Q10}{Q4} \times 100$; § $\frac{Q12}{Q6} \times 100$.

Table 6

Percent of ACH Debit Transactions Sent by Type of Transaction by Area

Area	Insurance Premium †		Home Mortgage ‡		Telephone Bill Payment §		Corporate Payment ll		Other Payments #	
	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980
Boston	0.9%	0.0%	0.0%	10.8%	0.0%	0.0%	48.0%	32.5%	51.1%	56.7%
New York	100.0	49.8	0.0	0.0	0.0	0.0	0.0	50.2	0.0	0.0
Philadelphia	0.0	*	0.0	*	0.0	*	0.0	*	100.0	*
Pittsburgh	0.7	*	0.0	*	0.0	*	99.3	*	0.1	*
Washington, D.C.	0.0	18.3	56.5	25.2	0.0	0.1	0.0	3.1	43.5	53.4
Atlanta	34.3	5.8	16.4	12.3	4.9	7.*	14.1	20.6	30.3	54.2
Chicago	29.8	0.0	53.5	1.5	0.0	0.0	0.0	64.8	16.7	33.7
Cleveland	32.0	19.2	1.2	1.4	0.0	0.0	0.0	42.6	21.6	36.8
Detroit	0.0	14.7	0.6	0.2	0.0	0.0	0.0	28.1	99.4	57.0
Minneapolis/St. Paul	*	*	*	*	*	*	*	*	*	*
St. Louis	47.4	13.6	45.8	4.8	0.0	14.0	2.6	56.2	4.2	11.5
Dallas	*	*	*	*	*	*	*	66.6	*	33.4
Houston	0.0	0.0	0.0	25.0	0.0	0.0	0.0	25.0	100.0	50.0
Los Angeles	0.0	*	100.0	*	0.0	*	0.0	*	0.0	*
San Francisco	64.9	19.1	35.1	30.9	0.0	25.0	0.0	0.0	0.0	25.0
Denver	7.5	6.4	27.1	26.9	0.0	0.0	0.0	33.3	65.4	33.3
Total banks	32	52	32	52	32	52	32	52	32	52
Average	65.4%	77.8%	14.5%	1.7%	2.2%	1.0%	10.0%	8.1%	7.9%	11.4%
Median	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	6.3%	13.8%

*No respondents; † $\frac{\text{Q13}}{\text{Q23}} \times 100$; ‡ $\frac{\text{Q15}}{\text{Q23}} \times 100$; § $\frac{\text{Q17}}{\text{Q23}} \times 100$; ll $\frac{\text{Q19}}{\text{Q23}} \times 100$; # $\frac{\text{Q21}}{\text{Q23}} \times 100$.

The types of ACH debit transactions received by responding banks are shown in Table 7. Not surprisingly, insurance premiums (31.7%) led all other specified debits. Following in frequency are corporate payments (7.2%), telephone bill payments (4.3%), and home mortgages (2.2%). As expected, debits classified as "other" accounted for 54.6% of transactions received — due to the customary difficulties with categorizing incoming ACH debit transactions.

Table 7

Percent of ACH Debit Transactions Received by Type of Transaction by Area

Area	Insurance Premium †		Home Mortgage ‡		Telephone Bill Payment §		Corporate Payment ll		Other Payments #	
	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980
Boston	71.0%	61.8%	0.8%	0.0%	0.2%	0.1%	3.5%	7.7%	24.5%	30.4%
New York	65.0	74.4	8.1	0.0	1.3	0.1	24.4	19.8	1.2	5.7
Philadelphia	43.1	70.5	0.0	0.3	9.1	0.0	22.7	15.2	20.5	14.0
Pittsburgh	23.5	44.0	0.0	0.0	0.0	0.0	76.5	18.5	0.0	37.5
Washington, D.C.	42.3	23.7	2.1	5.8	0.0	2.7	19.1	5.5	36.5	62.3
Atlanta	43.0	54.6	4.9	0.9	8.3	1.4	9.1	11.3	34.7	31.7
Chicago	74.4	76.6	5.0	4.8	0.0	3.8	12.0	9.6	12.9	5.2
Cleveland	34.8	49.9	19.1	5.0	2.2	1.2	9.4	21.5	34.5	22.3
Detroit	55.7	53.1	0.1	0.2	0.0	0.0	8.7	11.5	35.5	35.2
Minneapolis/St. Paul	*	*	*	*	*	*	*	*	*	*
St. Louis	33.6	34.8	15.0	7.0	0.3	3.2	14.7	15.6	36.4	39.5
Dallas	85.7	39.4	0.2	5.0	2.9	0.0	2.6	6.9	8.6	48.7
Houston	49.4	43.2	0.2	1.8	0.8	0.0	12.9	4.6	36.7	50.4
Los Angeles	45.3	62.1	2.2	2.5	0.0	0.0	20.1	25.1	32.5	10.4
San Francisco	18.2	41.1	6.0	1.0	0.9	0.2	13.9	8.6	61.0	49.1
Denver	15.3	8.2	3.3	0.4	26.7	0.0	5.0	1.9	49.8	89.5
Total banks	109	116	108	116	108	116	108	116	107	116
Average	31.1%	31.7%	9.0%	2.2%	2.6%	4.3%	15.6%	7.2%	41.5%	54.6%
Median	51.0%	62.9%	0.0%	0.0%	0.0%	0.0%	2.1%	8.8%	14.5%	14.2%

*No respondents: † $\frac{Q14}{Q24} \times 100$; ‡ $\frac{Q16}{Q24} \times 100$; § $\frac{Q18}{Q24} \times 100$; ll $\frac{Q20}{Q24} \times 100$; # $\frac{Q22}{Q24} \times 100$.

Findings: ATM

Linda Fenner Zimmer, an authority on ATMs, has estimated that there are approximately 18,500 to 19,000 units installed in the United States. Bankers' reasons for installing and supporting an ATM program are many. For some, ATMs offer an opportunity to help reduce reliance on manual posting of routine transactions. Other bankers view ATMs as a means for enhancing market share, visibility, and bank image. For these and other reasons, most bankers consider the ATM to be a success.

This portion of the report analyzes several ATM transaction variables, including transaction mix, dollar volume, and transaction volume. ATM location and on-line versus off-line operations are also examined.

Transaction Mix

The overall transaction mix for ATMs has changed little over the three years surveyed. Cash withdrawals from checking accounts constitute 52.2% of total ATM transactions, 1.1% higher than in 1979. Balance inquiries continue to be a popular transaction option, representing 19.1% of total transactions, a small decrease from prior years' levels. ATM deposits to checking accounts follow next in transaction usage, having increased from 11.9% to 13.6% of total transactions (Table 8).

Dollar Value of ATM Transactions

The average dollar amounts involved in each type of ATM transaction increased modestly in all survey categories except checking deposits, as Table 9 clearly shows. Paralleling the findings of the 1979 survey, 1980 data also reflect a substantial difference in dollar amounts for deposit versus withdrawal transactions. The average ATM checking account deposit was $281, the average savings deposit was $313. By comparison, average withdrawals were $39 for checking, $44 for savings, and $58 for credit cards.

Table 8

Percent of ATM Transactions by Type by Area

Area	Cash Withdrawals from Checking †			Cash Withdrawals from Savings ‡			Cash Withdrawals from Credit Card §			Balance Inquiries ‖			Transfers #			Checking Deposits ††			Savings Deposits §§			Other ATM Transactions ‖‖		
	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978**	1979	1980	1978**	1979	1980	1978	1979	1980
Boston	41.6%	59.8%	61.0%	6.8%	8.5%	8.2%	1.3%	1.4%	0.5%	21.6%	7.8%	18.1%	3.6%	3.0%	1.6%		10.8%	8.5%		1.8%	1.7%	29.1%	6.7%	0.5%
New York	59.1	66.2	47.5	1.9	3.2	9.0	23.7	8.5	4.0	13.5	13.0	28.8	0.4	1.6	1.2		6.2	7.3		0.4	1.5	1.5	0.8	0.6
Philadelphia	49.2	58.9	55.1	11.0	10.0	10.2	2.7	1.2	1.0	12.3	7.2	13.3	4.1	3.5	2.4		16.0	13.7		2.1	1.7	20.7	1.2	2.7
Pittsburgh	58.2	55.2	59.2	5.9	10.0	9.9	4.1	2.5	2.0	16.8	13.0	16.9	1.2	2.1	1.8		12.7	9.0		1.2	1.0	13.8	3.3	0.3
Washington, D.C.	51.5	59.3	58.9	6.0	5.5	7.6	5.2	2.3	1.5	17.8	12.2	13.7	2.9	3.5	2.7		13.9	11.5		1.4	1.0	16.6	1.9	3.1
Atlanta	52.3	52.8	51.5	4.3	4.6	5.4	1.0	3.4	1.4	26.3	23.6	22.5	2.0	2.0	4.6		10.6	9.7		0.5	1.1	14.0	2.5	3.8
Chicago	27.1	49.6	54.6	9.4	9.9	10.1	0.9	1.0	1.5	41.2	14.2	14.2	4.2	5.9	4.9		10.9	10.6		1.5	1.8	17.2	7.1	2.4
Cleveland	41.4	51.4	50.4	10.1	10.6	12.2	3.1	2.8	1.8	21.3	13.6	17.3	4.4	3.7	2.6		13.9	12.0		1.4	1.8	19.8	2.5	2.0
Detroit	45.6	55.7	45.0	13.8	10.3	14.4	1.1	9.4	9.5	22.6	9.5	15.9	6.8	3.3	3.5		9.6	8.3		1.1	1.6	10.1	1.1	1.8
Minneapolis/St. Paul	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*		*	*	*	*	*
St. Louis	51.1	53.5	55.2	6.7	8.1	7.4	2.8	1.6	1.3	22.3	17.2	20.0	3.8	3.7	3.3		11.7	10.4		1.0	0.9	13.1	3.0	1.4
Dallas	*	50.9	49.9	*	3.2	4.5	*	4.2	0.6	*	28.2	30.8	*	2.2	1.8		10.1	10.0		0.5	0.9	*	0.7	1.6
Houston	61.6	45.4	60.6	5.0	4.3	7.8	0.4	10.9	0.4	16.7	19.1	18.2	1.6	2.0	1.2		8.1	10.7		0.4	0.8	14.7	9.9	0.3
Los Angeles	52.8	51.1	50.4	2.8	4.6	4.9	8.6	6.5	0.9	14.3	17.6	19.8	3.4	2.9	1.5		14.2	20.2		0.6	0.5	18.1	2.6	1.8
San Francisco	64.2	52.5	64.6	5.5	18.5	9.8	4.0	1.3	0.5	16.3	11.0	8.4	4.6	2.1	2.4		13.5	12.8		0.4	1.1	5.3	0.7	0.4
Denver	52.8	55.9	61.5	5.2	4.5	3.7	0.5	5.5	2.8	19.3	16.8	17.4	2.6	2.4	1.7		11.5	9.9		0.4	0.4	19.6	3.0	2.6
Total banks	56	109	126	56	109	126	56	109	126	56	109	126	56	109	126		109	126		109	126	56	109	126
Average	50.1%	51.1%	52.2%	6.6%	7.7%	8.3%	3.0%	2.3%	1.1%	21.9%	20.4%	19.1%	3.2%	2.8%	2.3%		11.9%	13.6%		1.0%	1.4%	15.2%	2.8%	2.0%
Median	51.5%	53.3%	53.4%	5.6%	5.9%	7.5%	1.8%	1.3%	0.7%	18.4%	15.6%	18.7%	2.7%	2.7%	2.2%		11.9%	10.0%		0.8%	0.9%	14.9%	0.8%	0.5%

*No respondents; $\frac{\text{† Q25}}{\text{Q33}} \times 100$; $\frac{\text{‡ Q26}}{\text{Q33}} \times 100$; $\frac{\text{§ Q27}}{\text{Q33}} \times 100$; $\frac{\text{‖ Q28}}{\text{Q33}} \times 100$; $\frac{\text{\# Q29}}{\text{Q33}} \times 100$; **No comparable data collected; $\frac{\text{†† Q30}}{\text{Q33}} \times 100$; $\frac{\text{§§ Q31}}{\text{Q33}} \times 100$; $\frac{\text{‖‖ Q32}}{\text{Q33}} \times 100$.

Table 9

Average Dollar Value of ATM Transactions by Area

Area	Cash Withdrawals from Checking†		Cash Withdrawals from Savings‡		Cash Withdrawals from Credit Card§		Checking Deposits ll		Savings Deposits #	
	1979	1980	1979	1980	1979	1980	1979	1980	1979	1980
Boston	$34	$38	$46	$35	$31	$39	$265	$348	$988	$229
New York	44	47	35	45	44	44	278	312	258	212
Philadelphia	40	42	57	48	68	58	237	329	327	267
Pittsburgh	38	37	41	38	43	51	276	283	237	244
Washington, D.C.	36	36	48	45	53	48	324	303	328	613
Atlanta	34	35	41	36	43	91	298	258	235	341
Chicago	40	39	60	53	45	43	332	361	303	391
Cleveland	39	35	39	36	43	40	297	272	250	237
Detroit	40	43	47	46	45	45	332	311	363	357
Minneapolis/ St. Paul	*	*	*	*	*	*	*	*	*	*
St. Louis	37	38	43	53	53	55	293	299	423	291
Dallas	31	35	40	68	53	58	272	358	519	264
Houston	38	38	42	38	40	56	438	278	403	287
Los Angeles	39	40	46	55	45	46	348	290	346	376
San Francisco	37	44	34	41	43	51	346	317	290	368
Denver	35	29	44	39	62	46	295	373	308	257
Total banks	106	124	100	122	85	95	101	119	90	113
Average	[illegible]	$39	$38	$44	$47	$58	$309	$281	$285	$313
Median	[illegible]	$38	$42	$43	$43	$46	$313	$289	$271	$279

*No respondents: † Q34/Q25; ‡ Q35/Q26; § Q36/Q27; ll Q37/Q30; # Q38/Q31.

Weekly ATM Transactions

Average weekly transactions per ATM unit continue to increase (Table 10). Total transactions numbered 1,262.1, a 17.5% increase over volumes reported in 1979.

In the 1979 survey, ATMs were generally found to be net deposit takers. In that study, total withdrawal and total deposit dollars were calculated by multiplying the average dollar amounts by the average transaction volumes (Table 9 times Table 10). The dollar deposited to dollar withdrawn ratio was 1.8:1. The 1980 data are summarized as follows:

Table 10

Average Weekly Transactions per ATM Unit by Area

Area	Cash Withdrawals from Checking†			Cash Withdrawals from Savings‡			Cash Withdrawals from Credit Card§			Balance Inquiries ‖			Transfers #			Checking Deposits ††			Savings Deposits §§			Other ATM Transactions ‖ ‖			Total ATM Transactions # #		
	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978**	1979	1980	1978**	1979	1980	1978	1979	1980	1978	1979	1980
Boston	178.4	333.2	369.8	29.0	47.1	65.7	5.5	5.8	3.6	92.6	72.6	150.3	15.6	15.6	12.3		48.0	67.7		9.2	13.2	124.8	36.1	3.0	429.0	567.6	685.6
New York	378.7	318.4	424.2	0.0	16.4	85.9	155.8	42.2	29.6	76.1	93.4	302.2	0.1	9.0	11.1		38.9	65.8		1.9	16.0	2.9	6.0	7.1	611.7	526.0	941.9
Philadelphia	491.7	381.5	476.3	10.0	75.9	119.4	26.6	8.3	13.9	122.5	82.6	175.2	41.0	24.2	27.4		112.6	133.1		16.0	21.1	207.3	9.3	44.5	999.1	710.5	1,010.8
Pittsburgh	732.4	564.1	759.2	74.2	97.3	105.8	52.0	26.9	26.3	212.1	187.6	313.8	14.8	22.8	22.4		137.0	120.1		12.3	11.6	173.6	56.4	3.9	1,259.1	1,104.3	1,363.1
Washington, D.C.	443.9	669.0	695.7	51.7	61.5	92.7	44.6	22.0	18.3	153.8	142.4	177.2	25.3	34.5	32.0		150.4	136.2		20.2	12.2	143.3	20.4	39.3	862.7	1,120.3	1,203.7
Atlanta	880.0	797.0	701.6	72.3	73.8	64.2	17.6	28.9	14.2	442.9	390.0	347.5	34.2	30.2	33.5		160.7	113.8		8.4	28.8	235.5	24.6	54.5	1,682.6	1,513.6	1,358.1
Chicago	90.8	348.4	461.3	31.5	85.7	99.4	2.9	12.8	14.9	138.0	131.7	153.4	14.1	38.4	45.4		99.2	102.7		16.2	18.5	57.6	144.2	23.9	334.8	876.7	919.4
Cleveland	440.1	392.8	466.3	112.2	98.4	114.7	28.0	19.0	14.8	262.3	257.9	215.3	49.9	54.4	25.5		110.0	117.2		14.4	19.7	223.1	36.3	21.5	1,115.6	984.2	994.9
Detroit	494.2	202.6	343.4	149.4	30.1	121.9	11.7	18.2	15.4	244.5	40.1	197.3	73.7	8.7	38.6		31.2	75.0		3.7	14.9	109.3	3.0	17.4	1,082.8	337.7	823.8
Minneapolis/ St. Paul	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*		*	*	*	*	*	*	*	*
St. Louis	577.8	614.1	656.5	76.2	96.5	91.5	32.2	18.9	17.2	252.6	261.2	285.9	43.4	43.7	36.4		128.0	124.5		11.5	12.0	148.1	29.2	16.5	1,130.3	1,203.1	1,240.5
Dallas	*	776.0	744.4	*	62.5	110.4	*	38.1	6.8	*	530.9	445.5	*	29.2	23.1		156.1	155.5		10.4	22.4	*	12.1	56.7	*	1,615.4	1,564.9
Houston	364.5	484.4	534.3	29.4	50.1	79.6	2.2	15.2	0.8	99.1	237.7	208.1	9.6	19.1	14.4		91.8	106.6		5.3	8.9	86.9	87.1	3.0	591.8	990.7	955.7
Los Angeles	407.5	692.1	722.9	22.0	53.8	77.8	66.2	47.5	14.8	110.2	219.3	279.6	26.3	32.9	25.0		208.1	264.9		7.5	7.4	139.4	21.7	20.4	771.6	1,262.8	1,412.7
San Francisco	423.2	399.5	714.3	36.4	85.8	110.8	26.2	10.9	6.0	107.8	121.4	106.9	30.1	15.9	28.2		123.3	169.3		2.0	14.4	34.8	4.1	4.8	659.5	763.0	1,154.7
Denver	741.0	508.5	644.9	73.0	46.6	46.8	6.3	17.5	16.1	271.4	181.3	256.7	36.5	20.1	16.9		122.7	120.8		5.8	5.9	274.8	43.6	27.5	1,403.0	945.2	1,135.5
Total banks	54	105	124	54	105	124	54	105	124	54	105	124	54	105	124		105	124		105	124	54	105	124	54	105	124
Average	491.1	546.6	608.0	64.2	81.0	103.4	28.6	23.4	14.2	217.8	225.7	242.1	31.5	30.1	29.0		127.0	172.2		10.2	17.6	148.6	30.0	25.5	981.2	1,074.0	1,262.1
Median	464.1	428.3	516.5	59.8	46.0	70.8	20.5	10.0	6.7	156.6	100.7	191.1	26.9	19.1	20.2		93.5	111.3		5.6	8.9	172.1	5.2	5.1	1,039.0	792.2	1,040.7

*No respondents: † Q25/Q42; ‡ Q26/Q42; § Q27/Q42; ‖ Q28/Q42; # Q29/Q42; **No comparable data collected: †† Q30/Q42; §§ Q31/Q42; ‖ ‖ Q32/Q42; # # Q33/Q42

1980 Total Dollar Value of ATM Activity

Transaction Type	Withdrawals	Deposits	Net
Checking	$25,662.00	$48,388.00	$22,726.00
Savings	4,550.00	5,509.00	959.00
Credit card	824.00	0.00	(824.00)
Total	$31,036.00	$53,897.00	$22,861.00

Overall, net deposits were almost 25% higher in 1980 than in 1979, even though the dollar deposited to dollar withdrawn ratio declined slightly to 1.7:1.

Table 11 presents the data on the number of weekly transactions per ATM unit, categorized by terminal location. Consistent with the 1979 findings, average transaction volumes are relatively evenly distributed, irrespective of the location of ATM units. Although the average volumes shown in Table 11 differ somewhat from those reported in Table 10—due to the smaller number of banks able to report these data—the relationship should remain substantially the same.

Table 11

Number of Weekly Transactions per ATM Unit Location by Area

Area	Main Office Units†		Branch Office Units‡		Off-Premise Units§		Total ll	
	1979	1980	1979	1980	1979	1980	1979	1980
Boston	705	798	457	688	0	888	495	565
New York	762	945	402	553	554	1,087	445	640
Philadelphia	663	617	602	694	720	725	609	695
Pittsburgh	837	2,108	1,050	1,230	1,937	2,369	991	1,329
Washington, D.C.	361	827	1,063	1,125	842	831	979	1,052
Atlanta	1,098	1,192	915	1,297	962	1,419	1,147	1,256
Chicago	517	734	570	582	364	679	736	660
Cleveland	1,014	728	548	743	790	289	576	746
Detroit	330	693	248	434	172	0	298	460
Minneapolis/St. Paul	*	*	*	*	*	*	*	*
St. Louis	982	1,109	1,216	1,253	474	958	1,055	1,135
Dallas	807	714	1,679	3,206	1,173	2,210	1,084	1,927
Houston	648	650	740	508	30	808	769	740
Los Angeles	768	784	1,235	1,127	610	908	1,245	1,097
San Francisco	493	2,062	670	1,045	601	1,410	587	1,059
Denver	999	907	121	369	1,764	2,040	876	905
Total banks	63	68	71	73	31	35	90	82
Average	786	1,089	813	1,018	852	1,190	813	1,040
Median	722	823	669	831	789	994	667	842

*No respondents: † Q47/Q39; ‡ Q48/Q40; § Q49/Q41; ll Q50/Q42.

Location of ATM Units

Banks have given initial priority to placing ATMs in main office and branch locations, as the data in Table 12 document. Slightly more than 91% of ATM units owned by reporting institutions are located on bank property.

These data also demonstrate that priorities for off-premise locations vary widely by geographic area. These variations can largely be traced to differences among both state laws and the levels of maturity for ATM programs. The highest percentage of off-premise installations was reported for the Dallas area (26.3%), followed by Detroit (22.3%) and Denver (18.3%).

Table 12

ATM Units by Area

Area	Percent of Main Office ATM Units†			Percent of Branch Office ATM Units‡			Percent of Off-Premise ATM Units§		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
Boston	9.5%	34.0%	31.8%	90.5%	66.0%	67.1%	0.0%	0.0%	1.1%
New York	3.2	11.3	17.8	90.5	85.7	71.1	6.3	3.1	11.1
Philadelphia	10.2	15.8	5.1	85.2	79.5	87.0	4.5	4.7	7.9
Pittsburgh	3.7	30.9	2.9	95.1	64.2	94.6	1.2	4.8	2.5
Washington, D.C.	5.7	13.8	2.9	80.9	78.3	88.2	13.4	8.0	8.9
Atlanta	8.4	14.0	6.3	74.3	64.6	76.7	17.3	21.3	17.1
Chicago	22.3	47.9	50.6	11.4	37.1	34.7	66.3	15.0	14.6
Cleveland	7.1	6.4	7.1	83.8	89.3	89.5	9.1	4.3	3.4
Detroit	9.6	18.3	7.1	84.9	60.9	70.7	5.5	20.7	22.3
Minneapolis/St. Paul	*	*	*	*	*	*	*	*	*
St. Louis	10.1	26.8	25.9	64.3	64.8	68.2	25.6	8.3	5.9
Dallas	15.4	66.7	55.0	0.0	30.8	18.7	84.6	2.6	26.3
Houston	14.0	46.3	29.2	82.0	50.3	64.7	4.0	3.3	6.1
Los Angeles	3.7	7.1	4.8	80.0	88.5	93.2	16.2	4.4	2.0
San Francisco	3.8	3.9	1.5	86.7	88.4	97.4	9.5	7.7	1.1
Denver	48.9	48.3	38.6	0.0	39.4	43.1	51.1	12.3	18.3
Total banks	89	107	128	89	107	128	89	107	128
Average	10.6%	13.3%	8.1%	69.3%	77.7%	83.5%	20.1%	9.1%	8.5%
Median	7.1%	7.7%	5.4%	81.1%	84.2%	88.6%	0.0%	0.0%	0.0%

*No respondents; $\frac{\dagger\ Q39}{Q42} \times 100$; $\frac{\ddagger\ Q40}{Q42} \times 100$; $\frac{\S\ Q41}{Q42} \times 100$.

ATM Installation Plans

New installations planned show a marked shift toward off-premise locations, with an average of 24.7% of planned installations destined for off-premise sites—a significant increase from the 10.5% average reported in 1979. The industry generally reports a continuing commitment to expansion and development of ATM installations. Table 13 presents the data on ATM unit installation plans, categorized by both area and location. Overall ins allation growth—measuring total new ATM installations to current installations—is reported at 50.5%, with a median of 30%. Areas reporting the most dramatic growth are Dallas (423.3%), Pittsburgh (123.2%), and Boston (111.5%).

Table 13

ATM Unit Installation Plans by Area

Area	Percent of Total ATM Units to Be Installed in Main Office†		Percent of Total ATM Units to Be Installed in Branch Office‡		Percent of Total ATM Units to Be Installed Off-Premise§		Total New ATM Installations to Current Installations ll	
	1979	1980	1979	1980	1979	1980	1979	1980
Boston	16.7%	4.8%	81.3%	82.9%	2.1%	12.3%	387.0%	111.5%
New York	0.8	3.3	74.2	86.6	25.0	10.1	812.9	38.6
Philadelphia	9.5	1.1	75.8	81.7	14.6	17.2	760.4	94.8
Pittsburgh	3.3	0.0	80.0	68.8	16.7	31.2	143.4	123.2
Washington, D.C.	0.0	0.0	98.2	93.8	1.8	6.2	14.6	37.2
Atlanta	6.3	5.3	52.7	65.0	41.0	29.6	73.9	55.1
Chicago	29.9	14.3	41.1	57.6	39.1	28.1	93.6	34.9
Cleveland	0.0	5.2	92.1	87.4	7.9	7.5	27.2	45.1
Detroit	0.0	20.8	46.9	40.1	53.1	39.1	68.4	41.5
Minneapolis/St. Paul	*	*	*	*	*	*	*	*
St. Louis	16.7	15.6	63.9	60.0	19.4	24.4	61.5	18.1
Dallas	20.0	0.0	70.0	12.5	10.0	87.5	174.4	423.3
Houston	28.1	25.0	56.3	35.0	15.6	40.0	136.2	47.5
Los Angeles	35.7	2.0	60.3	90.9	4.1	7.1	128.3	57.5
San Francisco	0.1	0.1	89.1	78.3	10.7	21.7	202.8	69.3
Denver	8.3	13.3	25.0	50.0	66.7	36.7	55.6	70.2
Total banks	80	100	80	100	80	100	95	117
Average	17.8%	3.0%	71.7%	72.3%	10.5%	24.7%	74.8%	50.5%
Median	0.0%	0.0%	80.6%	80.0%	0.0%	8.9%	30.0%	30.0%

*No respondents; † $\frac{Q43}{Q46} \times 100$; ‡ $\frac{Q44}{Q46} \times 100$; § $\frac{Q45}{Q46} \times 100$; ll $\frac{Q46}{Q42} \times 100$.

On-Line Versus Off-Line

Table 14 compares the data for on-line and off-line ATM operation. These data give additional proof of the continuing commitment to on-line operation of ATMs. On-line installations averaged 87.3% of all surveyed ATMs, considerably higher than the 68.4% average for 1979. Eight areas reported 100% on-line operation for 1980. The highest levels of off-line operation were reported for Chicago (33.3%), Boston (25%), and Washington, D.C. (25%).

Table 14

On-Line Versus Off-Line ATM Units by Area

Area	Percent On-Line ATM Units		Percent Off-Line ATM Units	
	1979	1980	1979	1980
Boston	20.0%	75.0%	80.0%	25.0%
New York	33.3	80.0	66.7	20.0
Philadelphia	40.0	81.8	60.0	18.2
Pittsburgh	100.0	100.0	0.0	0.0
Washington, D.C.	50.0	75.0	50.0	25.0
Atlanta	83.3	84.6	16.6	15.4
Chicago	50.0	66.7	50.0	33.3
Cleveland	85.7	100.0	14.3	0.0
Detroit	66.7	100.0	33.3	0.0
Minneapolis/St. Paul	*	*	*	*
St. Louis	50.0	80.0	50.0	20.0
Dallas	100.0	100.0	0.0	0.0
Houston	80.0	100.0	20.0	0.0
Los Angeles	100.0	100.0	0.0	0.0
San Francisco	80.0	100.0	20.0	0.0
Denver	100.0	100.0	0.0	0.0
Total banks	57	79	57	79
Average	68.4%	87.3%	31.6%	12.7%

*No respondents.

Appendices

Appendix A

1980 Survey Questionnaire

1980
Check Collection Performance Measurement Survey
and
Survey of Electronic Funds Transfer Transactions

Bank Administration Institute

INSTRUCTIONS

1. Complete page 3 and the data collection questions for each day of the week, Monday through Saturday. Be sure to include the date in the space provided at the top of each column in Section I.

2. Complete page 16, 17, and 18 at end of week.

3. Mail completed survey booklet to:

   Constance Blecha, Research Assistant
   BANK ADMINISTRATION INSTITUTE
   P.O. Box 500, Park Ridge, Illinois 60068
   Telephone: 312/693-7300

4. Please read definitions before completing questionnaire.

BANK ADMINISTRATION INSTITUTE

Check Collection and EFT Transactions Performance Measurement

Date _____

Bank Name _____

Street Address _____

City _____

Name _____ Title _____
(of person to be contacted about survey data)

Phone _____

Name _____ Title _____
(of person to whom completed survey is to be returned, if different from above)

Number of DDA accounts in your bank _____

Number of DDA accounts in other banks for which you are doing the processing. _____

Please describe any significant check processing problems you are experiencing. Consider transportation, personnel, equipment, interbank exchange procedures, accuracy, theft, fraud, or security.

_____

_____

_____

_____

_____

_____

INCOMING WORK includes the check processing items received from the Federal Reserve, nonlocal banks, local banks and items included in all deposits made in your bank. Do not include the DDA items you process for other banks when you provide the accounting service on a fee basis. Do not include extra services performed over and above the check processing for lock box deposits, credit cards, preauthorized payments, account reconcilement, or wire transfer.

INCOMING WORK

QUESTION	Question Relationship	Monday Date ____ ____	Tuesday Date ____ ____
1. Number of amount encoded items received from other banks and customers who do their own encoding sent to the reader sorter	____		
2. Number of amount encoded items received from other banks and customers who do their own encoding *not* sent to the reader sorter	____		
3. Number of items your bank encoded on single-pocket machines sent to the reader sorter	____		
4. Number of items your bank encoded on single-pocket machines *not* sent to the reader sorter	____		
5. Number of items your bank encoded on multipocket machines sent to the reader sorter	____		
6. Number of items your bank encoded on multipocket machines *not* sent to the reader sorter	____		
7. Number of first-pass items processed on the reader sorter	1+3+5=7		
8. Number of items that were not processed on the reader sorter	2+4+6=8		
9. Number of items received by your bank	7+8=9		

DATA COLLECTION FORM

Please report all actual counts. Do *not* round off.

ITEMS consist of cashed and deposited checks, deposit tickets, control tickets, and other items that are normally processed commingled with checks on proof and/or encoding equipment. For batches use standard estimating techniques to determine item count.

Wednesday Date _____	**Thursday** Date _____	**Friday** Date _____	**Saturday** Date _____	**WEEKLY TOTAL**
				1.
				2.
				3.
				4.
				5.
				6.
				7.
				8.
				9.

Please report all actual counts. Do *not* round off.

OUTGOING WORK is the disposition of all items you received and processed today.

TRANSIT ITEMS are the items you processed both high speed and low speed that were "on-others."

II. OUTGOING WORK

QUESTION	Question Relationship	Monday	Tuesday
10. Total number of transit items (on others) sent.	———		
11. Total number of transit holdover (on others) items.	———		
12. Total number of on-us items paid and filed (from previous day's incoming work).	———		
13. Total number of on-us items held over.	———		
14. Total number of payable-thru drafts processed.	———		
15. Total number of items processed today.	10 + 11 + 12 + 13 + 14 = 15		
16. Total dollar value of items in No. 11.	———	$	$

III. TRANSIT RETURNS

TRANSIT RETURN—items returned today for any reason that were originally sent out as transit items from this bank.

QUESTION	Question Relationship	Monday	Tuesday
17. Total number of return items today.	———		
18. Total dollar value of items in Question No. 17.	———	$	$

TRANSIT HOLDOVERS—items received by your bank prior to a deadline but which were not processed by high-or low-speed systems in time to be sent for collection at that deadline. These would result in a loss of float to the bank but not to its customer. Do not add today's holdover items to the next day's count.

ON-US ITEMS—those items drawn on your bank; includes all types of checking accounts, cashier checks, deposit tickets, and control tickets.

ON-US ITEMS HELD OVER—items received by your bank that were not processed in time to be posted to your accounts on the day they were received.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				10.
				11.
				12.
				13.
				14.
				15.
$	$	$	$	$ 16.

Note: Due to rounding, estimating, and so on, the weekly totals for questions 9 and 15 may not balance, but they should approximate each other.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				17.
$	$	$	$	$ 18.

ITEMS MICROFILMED—total count of all check processing items filmed today.

IV. ITEMS MICROFILMED

QUESTION	Question Relationship	Monday	Tuesday
19. Total number of items filmed prior to reader/sorter processing.	——		
20. Total number of items filmed after reader/sorter processing.	——		
21. Total number of items filmed during reader/sorter processing.	——		
22. Total number of items microfilmed today.	19 + 20 + 21 = 22		

V. REJECTS—(Number of rejects occurred from question 7, Section I)

QUESTION	Question Relationship	Monday	Tuesday
23. Total number because of transit number field.	——		
24. Total number because of account number field.	——		
25. Total number because of dollar amount field.	——		
26. Total number due to other reasons.	——		
27. Total number of first-pass MICR rejects before high-speed reject reentry.	23 + 24 + 25 + 26 = 27		
28. Total number of first-pass MICR rejects remaining after high-speed reject reentry.	——		

Please report all actual counts. Do *not* round off.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				19.
				20.
				21.
				22.

REJECTS—are items rejected for any reason on the first pass through a MICR reader/sorter.

HIGH-SPEED REJECT REENTRY—is the recapture of items rejected for any reason on the first pass through a MICR reader/sorter by repassing the items.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				23.
				24.
				25.
				26.
				27.
				28.

EXCEPTION ITEMS—items or notification of items (such as debits, credits or inquiries) that may require reconcilement with other banks.

MISSENDS—items you missent or received from other banks that did not belong to you.

MISCODES (Encoding Errors)—dollar amount miscoded items you sent or received from other banks.

LISTING ERRORS (Incorrectly Charged)—items listed for an amount different from the written amount that you sent or received from other banks.

FREE—items received but not listed on incoming cash letters. (Enclosed not listed.)

LOST—items listed on the incoming cash letter but not received. (Listed not enclosed.)

VI. EXCEPTION ITEMS

QUESTION	Monday		Tuesday		Wednesday	
	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved
29./30. Missends						
31./32. Miscodes (Encoding Errors)						
33./34. Listing Errors (Incorrectly Charged)						
35./36. Free						
37./38. Lost						
39./40. Total exception items today 29 + 31 + 33 + 35 + 37 = 39 30 + 32 + 34 + 36 + 38 = 40	**39.**	**40.**	**39.**	**40.**	**39.**	**40.**
41. Total dollar value of items in No. 39.	$		$		$	
42. Total dollar value of items in No. 40.	$		$		$	

Please report all actual counts. Do *not* round off.

Thursday		Friday		Saturday		WEEKLY TOTAL	
Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved
						29.	30.
						31.	32.
						33.	34.
						35.	36.
						37.	38.
39.	40.	39.	40.	39.	40.	39.	40.
$		$		$		$ 41.	
$		$		$		$ 42.	

LABOR MAN-HOURS—number of clerical and supervisory man-hours worked to complete each labor category listed. Separate estimated production from supervisory man-hours when appropriate for working supervisor. Include general force man-hours used in appropriate labor categories listed.

MAN-HOURS—productive time spent by department employees in completing the following tasks.

EXCEPTION ITEM MAN-HOURS—number of man-hours spent in discovering/resolving exception items for the calendar day.

PREPARATION MAN-HOURS—number of man-hours spent in receiving, batching, performing quality control, and preproving incoming pre-encoded item deposits.

ENCODING OPERATOR MAN-HOURS—number of man-hours spent encoding the items received by your bank that were not encoded.

READER/SORTER OPERATOR MAN-HOURS—number of man-hours spent processing first pass items on the reader/sorter.

MICROFILM OPERATOR MAN-HOURS—number of man-hours spent microfilming the check processing items.

VII. LABOR MAN-HOURS

QUESTION	Monday		Tuesday		Wednesday	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
43./44. Total number of nonofficer man-hours to process the exception items in Nos. 39 and 40.						
45./46. Total data control man-hours to process the items in No. 9.						
47./48. Total single-pocket encoding operator man-hours to process the items in Nos. 3 and 4.						
49./50. Total preparation man-hours to process the items in Nos. 1 and 2.						
51./52. Total multipocket encoding operator man-hours to process the items in Nos. 5 and 6.						
53./54. Total reader/sorter man-hours to process the items in No. 7.						
55./56. Total operator man-hours for cash letter makeup; Nos. 10 and 11.						
57./58. Total microfilm operator man-hours to process the items in Nos. 19 and 20.						

DATA CONTROL MAN-HOURS—consists of making MICR corrections or substitutions, preparing other entries for high-speed processing, controlling the movement of batches of items into and out of high-speed processing areas, balancing the transit and DDA entry runs, and preparing of daily settlement figures for departments involved in processing checks.

RETURN MAN-HOURS—number of man-hours spent in processing items returned to your bank that you had originally sent out as on-others items.

PAYING AND FILING MAN-HOURS—consists of processing "on-us" items, including the capture of MICR data preparing daily transaction files, updating customer master files, sorting paper documents, statement printing, management reports, verification of signature, date holds, stop payments, check filing, and statement rendering.

BULK FILING PRODUCTIVITY—number of man-hours spent in the capture of "on-us" MICR data, preparing daily transaction files, updating customer master files, cycle sorting daily on-us items for storage, retrieving and fine sorting cycle-to-date paper items, verifying stop payments, date holds and suspects, statement printing, and statement rendering.

CASH LETTER MAKE-UP MAN-HOURS—consists of processing outgoing ("on-others") items on computer and/or reader/sorter equipment, including the printing of cash letters, the fine sorting of items by destination, and the assembly and dispatch of these items, including any manual processing of quick kills and reader/sorter rejects.

Thursday		Friday		Saturday		WEEKLY TOTAL	
Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
						43.	44.
						45.	46.
						47.	48.
						49.	50.
						51.	52.
						53.	54.
						55.	56.
						57.	58.

VII. LABOR MAN-HOURS (continued)

*If bulk filing, skip questions 59 and 60 and answer questions 61 and 62.

QUESTION	Monday		Tuesday		Wednesday	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
59./60. Total paying and filing man-hours to process the items in Nos. 12, 13, and 14						
61./62. Total bulk filing man-hours to process the items in Nos. 12, 13, and 14						
63./64. Total man-hours to process return items in No. 17						
65. All other nonofficer man-hours used in check processing not reported in Nos. 43 to 64	Hours / Description **65.** Total		Hours / Description **65.** Total		Hours / Description **65.** Total	

Thursday		Friday		Saturday		WEEKLY TOTAL	
Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
						59.	60.
						61.	62.
						63.	64.
Hours Description		Hours Description		Hours Description			
65. Total		65. Total		65. Total		65. Total	
		66. Total of questions 43 to 65.				66.	

PLEASE COMPLETE THE FOLLOWING AT THE END OF THE WEEK:

Total of Debit and Credit Outstanding Transit Exception Items	Part of Total Exception Items (Debit and Credit) That Have Been Outstanding for:				
	1 Month or Less	1-2 Months	2-4 Months	4-6 Months	Over 6 Months
67. $ Amount	**68.** $ Amount	**69.** $ Amount	**70.** $ Amount	**71.** $ Amount	**72.** $ Amount
73. Items	**74.** Items	**75.** Items	**76.** Items	**77.** Items	**78.** Items

NOTE: 67 = 68 + 69 + 70 + 71 + 72
73 = 74 + 75 + 76 + 77 + 78

79. Generally, our bank would: (circle one)

Always balance before items leave the bank, even if it means missing a transit deadline — **1**

Attempt to balance before the items leave the bank, but will make a transit deadline even if balancing is incomplete — **2**

Very seldom balance before the items leave the bank to make transit deadline — **3**

80. Our bank's experience over the last year indicates that exception items have: (circle one)

		Why
Grown	**1**	
Remained about the same	**2**	
Decreased	**3**	

81. The staff responsible for making adjustments and reconciliations over the last year has:

*Number of People**		**1979**	**1980**
Grown	**1**	**82.**	**83.**
Remained about the same	**2**		
Decreased	**3**		

**Number of full-time equivalent people.*
Express part-time people as fractional of full-time people.

SPECIAL PROCESSING QUESTIONNAIRE

Note: The following two sections should be completed if your bank utilizes on-line reject reentry and/or uses automated reject processing equipment.

ON-LINE REJECT REENTRY—processing of items rejected from all first pass and subsequent passes of the MICR reader/sorter, using CRT or other device (e.g., BancTec Core) to provide balancing, float, and on-us posting data directly to the MICR capture system.

ON-LINE REJECT REENTRY MAN-HOURS—consists of making MICR corrections/substitutions through CRT or other device, controlling the movement of batches of items into and out of the high-speed processing area, balancing the transit and DDA entry runs, both first and subsequent passes, and providing daily settlement figures for all affected departments.

ON-LINE REJECT REENTRY

QUESTION	Question Relationship	Weekly Total
84. Total number of reject items reentered on-line from first passes.	_____	84.
85. Total number of reject items reentered on-line from subsequent passes.	_____	85.
86. Total number of reject items reentered.	84 + 85 = 86	86.
87. Total man-hours to reenter reject items in No. 86.	_____	87.

AUTOMATED REJECT PROCESSING

AUTOMATED REJECT PROCESSING—processing of all nonmachinable items, including items rejected by the MICR reader/sorter, on *both first pass and subsequent passes*, using automated equipment from vendors, e.g., BancTec, Burroughs, Cummins-Allison, Lundy, NCR.

AUTOMATED REJECT PROCESSING MAN-HOURS—consists of preparing reject items for processing (including attaching strips) processing items, and balancing output.

88. Is your bank using automated processing? (circle one)

1. No **2.** Yes, exclusively **3.** Yes, in combination with manual methods

89. If not, does your bank plan to acquire automated reject processing capability? (circle one)

1. No **2.** Yes **3.** Undecided

90. If your bank uses automated reject processing, is it (circle one)

1. On-line? 2 Off-line?

91. If your bank uses automated reject processing, do you repair all fields, including account number? (circle one)

1. No **2.** Yes **3.** Yes, on selected banks **4.** Yes, but only if operator intervention is not required

QUESTION	Question Relationship	Weekly Total
92. Total number of all rejects processed through automated reject systems.	_____	**92.**
93. Total number of all rejects processed through manual reject systems.	_____	**93.**
94. Total number of MICR rejects processed.	92 + 93 = 94	**94.**
95. Total man-hours used to process reject items in No. 94.	_____	**95.**

Problems/comments: _____

1980 Survey of Electronic Funds Transfer Transactions

Please report all actual counts. Do not round off.

ACH TRANSACTIONS—any electronic funds transfer transactions processed through a local or regional automated clearinghouse, including any items you have processed for your own customers.

RETURNED ACH TRANSACTIONS:

Sent—any ACH transaction that you returned to the originator because you were unable to post to an account or for which no prenotification was on file.

Received—any ACH transaction that you originated, but which was returned to you by the ACH or the intended receiver.

I. ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESD
		Sent	Received	Sent
1. 2. Debits				
3. 4. Credits				
5. 6. Total ACH transactions	1+3=5 2+4=6			

II. RETURNED ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDA
		Sent	Received	Sent
7. 8. Debits returned				
9. 10. Credits returned				
11. 12. Total returned ACH transactions	7+9=11 8+10=12			

III. ACH DEBIT TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDA
		Sent	Received	Sent
13. 14. Insurance premium				
15. 16. Home mortgage				
17. 18. Telephone bill payment				
19. 20. Corporate payment—replacement for depository transfer				
21. 22. Other payments				
23. 24. Total ACH debit transactions	13+15+17+19+21=23 14+16+18+20+22=24			

ACH DEBIT TRANSACTIONS:

Insurance Premium, Home Mortgage—any ACH transaction sent or received by you for the payment of a consumer obligation.

Telephone Bill Payment—any ACH transaction sent or received by you as a result of a telephone bill payment program at a financial institution.

Corporate Payment—any ACH transaction sent or received by you that was originated by a corporation for the account of a corporation.

Rec'd	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY-SUNDAY		WEEKLY TOTAL	
	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
									1.	2.
									3.	4.
									5.	6.

Rec'd	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY-SUNDAY		WEEKLY TOTAL	
	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
									7.	8.
									9.	10.
									11.	12.

Rec'd	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY-SUNDAY		WEEKLY TOTAL	
	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
									13.	14.
									15.	16.
									17.	18.
									19.	20.
									21.	22.
									23.	24.

Please report all actual counts. Do *not* round off.

ATM TRANSACTIONS—any transactions initiated at an automated teller machine by the customer.

IV. ATM TRANSACTIONS

QUESTION	Question Relationship	MONDAY	TUE
25. Total number of cash withdrawals from checking.			
26. Total number of cash withdrawals from savings.			
27. Total number of cash withdrawals from credit card.			
28. Total number of balance inquiries.			
29. Total number of transfers between checking, savings, and credit card accounts.			
30. Total number of checking deposits received.			
31. Total number of savings deposits received.			
32. Total number of other ATM transactions.			
33. Total ATM transactions.	25+26+27+28+29+30+31+32=33		
34. Total dollar value of items in No. 25.		$	$
35. Total dollar value of items in No. 26.		$	$
36. Total dollar value of items in No. 27.		$	$
37. Total dollar value of items in No. 30.		$	$
38. Total dollar value of items in No. 31.		$	$

Please complete the following questions:

	Main O
How many automated teller machines do you presently have in service?	39.
How many automated teller machines do you plan to install in the next 12 months?	43.
What was the total volume of ATM transactions for all machines installed at each location during the survey week, excluding balance inquiries.	47.

51. Are your automated teller machines currently **1.** On-line or **2.** Off-line? *(circle one)*

Dr	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY/SUNDAY	WEEKLY TOTAL
					25.
					26.
					27.
					28.
					29.
					30.
					31.
					32.
					33.
	$	$	$	$	34. $
	$	$	$	$	35. $
	$	$	$	$	36. $
	$	$	$	$	37. $
	$	$	$	$	38. $

e	Branch Offices	Off-premise Units	Total ATM Units
	40.	41.	42.
	44.	45.	46.
	48.	49.	50.

NOTE: 42=39+40+41
46=43+44+45
50=47+48+49=33-28

Appendix B

EFT Geographic Areas

Figure B-1
EFT Geographic Areas

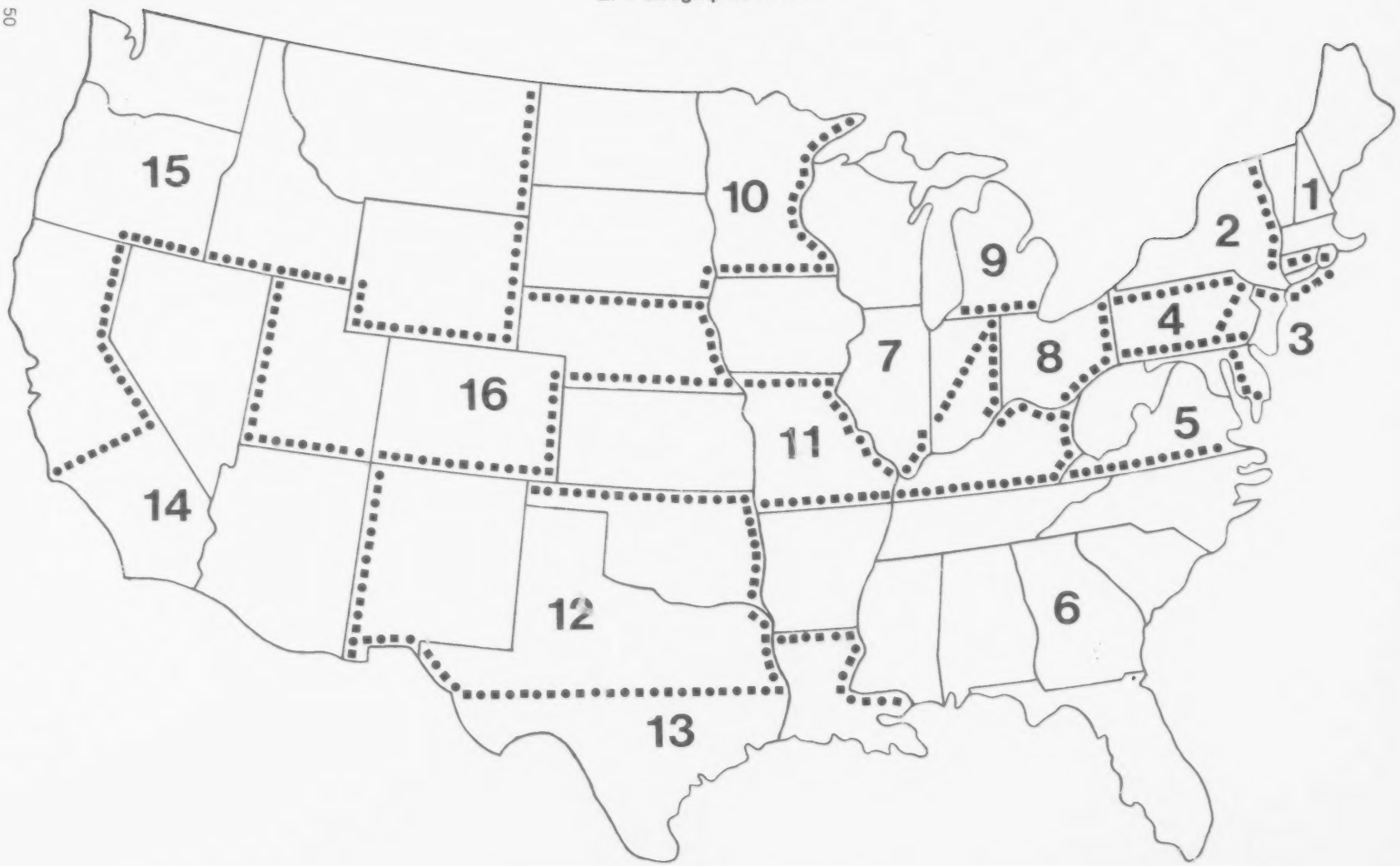

Table B-1

Survey Respondents by Geographic Area

Area*	ADL Survey Banks				All Reporting Banks†			
	1977	1978	1979	1980	1977	1978	1979	1980
Boston	3	3	1	3	14	10	9	12
New York	5	5	5	4	18	20	17	17
Philadelphia	3	3	1	2	21	18	22	24
Pittsburgh	4	3	2	3	6	6	5	5
Washington, D.C.	0	2	1	1	8	10	7	9
Atlanta	2	2	2	1	18	14	19	21
Chicago	4	6	3	5	14	12	8	11
Cleveland	2	3	3	3	10	12	11	11
Detroit	2	3	1	2	9	6	8	9
Minneapolis/St. Paul	3	0	0	0	3	0	0	0
St. Louis	3	1	2	3	10	9	9	11
Dallas	3	3	2	3	8	6	4	6
Houston	2	2	2	2	5	8	9	8
Los Angeles	2	2	1	1	9	9	9	10
San Francisco	3	2	2	1	9	8	11	11
Denver	3	3	2	2	6	6	5	5
Total banks	44	43	30	36	168	154	153	170

*_The Outlook on the Nation's Check Payment System: 1970-1980_, Arthur D. Little, Inc., Cambridge, Massachusetts, December, 1970.

† The non-ADL banks are not necessarily located in the cities surveyed by ADL. For the sake of consistency, however, their data are included in a regional area that has as its center the city studied in this survey. All reporting banks include the data from the ADL banks.